SAFETY PROGRAM

Command

Leader

Individual

"The Three Tiered Approach"

TRADOC PRE COMMAND COURSE

“Leaders must supervise the execution of their orders.

The more untrained the troops, the more detailed this supervision must be.”

Infantry in Battle, 1939

THREE TIER APPROACH TO SAFETY

TIER 1: COMMAND LEVEL

- **Provide *command climate* that ties safety to force protection**
- **Establish *standards* for safety**
- **Provide *resources* for safety**
- ***Plan training* consistent with abilities**
- **Make *risk acceptance decision***

THREE TIER APPROACH TO SAFETY

TIER 2: LEADER LEVEL

- ***Reinforce command climate*** **on safety**
- ***Identify*** **and eliminate or control safety hazards**
- ***Emphasize*** **performance to standards**
- ***Assess*** **risks**
- **Make risk decision; *supervise / follow-up***

THREE TIER APPROACH TO SAFETY

TIER 3: INDIVIDUAL LEVEL

- Take *responsibility*
- *Do something* about unsafe acts
- *Modify* your own risk behavior
- *Perform* to standards
- Be part of the *buddy system*

RISK MANAGEMENT DEFINITIONS

RISK

- An unexpected or estimated *loss, danger, or peril* due to or resulting from a *hazard*. Risk is expressed in terms of hazard severity and probability--the potential consequences (loss or injury) of an accident.

See FM 100-14 Risk Management

RISK MANAGEMENT DEFINITIONS

Risk Management

- ✔ **The process of making high risk operations safer by *eliminating* or *reducing* risks while *retaining* overall mission *benefit.***

See FM 100-14 Risk Management

RISK MANAGEMENT RULES

- ***Integrate*** **into planning**
- **Accept no *unnecessary* risk**
- **Make risk *decision* at the *proper level***
- ***Accept*** **risk if *benefits* outweigh the costs**

Leader Responsibility

Resources and Techniques

- Brain Storming
- Experts
- Publications
- Accident Information
- Scenario Thinking

RISK MANAGEMENT DEFINITIONS

Risk Assessment

✔ **The process of *identifying* and *analy*
hazards to protect the force.**

See FM 100-14 Risk Management

RISK ASSESSMENT PROCESS

- ✔ ***Identify*** **Hazards**
- ✔ ***Assess*** **Hazards**
- ✔ **Make Risk** ***Decision***
- ✔ **Implement** ***Controls***
- ✔ ***Supervise***

Develop Controls & Make Risk Decision

CONTROLS:

For each hazard

- **Implement existing controls if adequate, if not**
  adjust to make adequate or develop new controls

***CONSIDER*:**

- **Realism, time, money and resources**
- **Minimize chance of accidents**
- **Maximize chance of mission accomplishment**

DECISION:

- ***Determine*** **level of residual risk**
- **Have the *appropriate level* of command**
  accept **risk**

IMPLEMENT CONTROLS

- Standing Operating Procedures (SOP'S)
- Orders
- Briefings and back-briefs
- Training
- Rehearsals
- New equipment

Supervise

All Soldiers responsible (self-discipline) for:

- ***Performing* to standard**
- ***Executing* controls**
- ***Recognizing* unsafe acts or conditions**

- ***Leaders are also responsible for enforcemen***

– Don't expect what you don't inspect.

Evaluate

- ***Effectiveness of Controls (adjust/update)***
- ***Feedback - AAR's***

RISK ASSESSMENT MATRIX

EFFECT			HAZARD PROBABILITY				
			Frequent	Likely	Occasional	Seldom	Unlikely
			A	B	C	D	E
	Catastrophic	I	EXTREMELY HIGH				
	Critical	II		HIGH			
	Marginal	III		MODERATE			
	Negligible	IV				LOW	

RISK LEVELS

EXTREMELY HIGH

loss of ability to accomplish mission

HIGH RISK

significantly degrades mission capabilities in terms of required mission standards

MODERATE RISK

degrades mission capabilities in terms of required mission standards

LOW RISK

little or no impact on mission accomplishment

EFFECT

CATASTROPHIC- Death or permanent total disability, system loss, major property damage.

CRITICAL----------Permanent partial disability, temporary total disability in excess of 3 months, major system damage, significant property damage.

MARGINAL---------Minor injury, lost workday accident, compensable injury or illness, minor system damage, minor property damage.

NEGLIGIBLE-------First aid or minor supportive medical treatment, minor system impairment.

PROBABILITY

FREQUENT Occurs often in career / equipment service life. Continuously experienced.

LIKELY Occurs several times in career / equipment service life. Occurs frequently.

OCCASIONAL Occurs sometime in career / equipment service life. Occurs sporadically, or several times in inventory service life.

SELDOM Possible to occur in career/equipment service life. Remote chance of occurrence: expected to occur
sometime in inventory service life.

UNLIKELY Can assume will not occur in career / equipment service life. Possible, but improbable; occurs only very rarely.

A. Mission or Task	B. Date/Time Group (DD MM YY/HHMM) Begin: End:	C. Date prepared:
D. Prepared By: (Rank, Last Name, Duty Position)		

E. Task	F. Identify Hazard	G. Asses Hazard	H. Develop Controls	I. Determine Residual Risk	j. Impl

Check with your Safety Office (may be required for every event / site if not already on hand)

Determine overall mission/task risk level after controls are implemented (Circle one)

LOW **MODERATE** **HIGH** **EXTRE**

Considerations

- **Phase (week) of Training**
- **Weather *(Cold, Wet, Heat Cate***
- **Supervisor Experience**
- **Site *(New or Routine)***
- **Equipment *(Age, Familiarity)***
- **Physical Requirements**
- **Rest *(Prior)***
- **Confidence Level**

SAFETY

What Leaders Should Do

- ✔ Set high safety *standards*
- ✔ Motivate and discipline
- ✔ Know their soldiers and equipmen
- ✔ *Manage risk* in training
- ✔ Expect subordinates to assess training risks *(and check)*
- ✔ Maintain *awareness*

Horrific Things Can Happen If <u>You</u> Don't Do Things Righ

The Road March Background

A Basic Combat Training Company, with 218 soldiers assigned, in the ixth week of training, scheduled th fourth (10k) of five POI foot marche for 28 July

This scenario actually occurred at Fort Jackson, South Carolina

The Road March Planning Factors

FM 21-18 Guidelines

Rest and Water halts

1st hour.....15 minutes minimum

2d hour.....10 minutes minimum

3d hour.....10 minutes minimum

4th hour.....10 minutes minimum

Guidelines repeated in Training Support Package

The Road March Planning Factors

FM 21-18 Guidelines

- **Recon march route**
- **Rate - 4 km per hour**
- **Soldiers should refill their canteens every halt rest halt (2 qts per soldier**
- **Maintain communications between units and higher HQ**

The Road March
Planning Factors

TRADOC Reg 350-6 and FJ Reg 3

- Follow march with a vehicle
- Chart 4 (Heat cat / work / rest standa
- Timely notification of heat category
- Cross roads with road guards
- Maintain proper interval and control
- Maintain communication with range c
- Report start and stop time to range c

The Road March
The Plan

- Start march at 0500
- 1st water halt at Range 9
- 20 gallons of water per platoon at Ra
- 2d water halt and breakfast at Anzio
- Complete march at Bastogne 0900 (4
- Trail *vehicle* emplace OPFOR at Cowp
  then meet Company at Anzio
- Upon completion of foot march
  conduct U.S. Weapons Training, then
  Event Trail

The Road March Execution

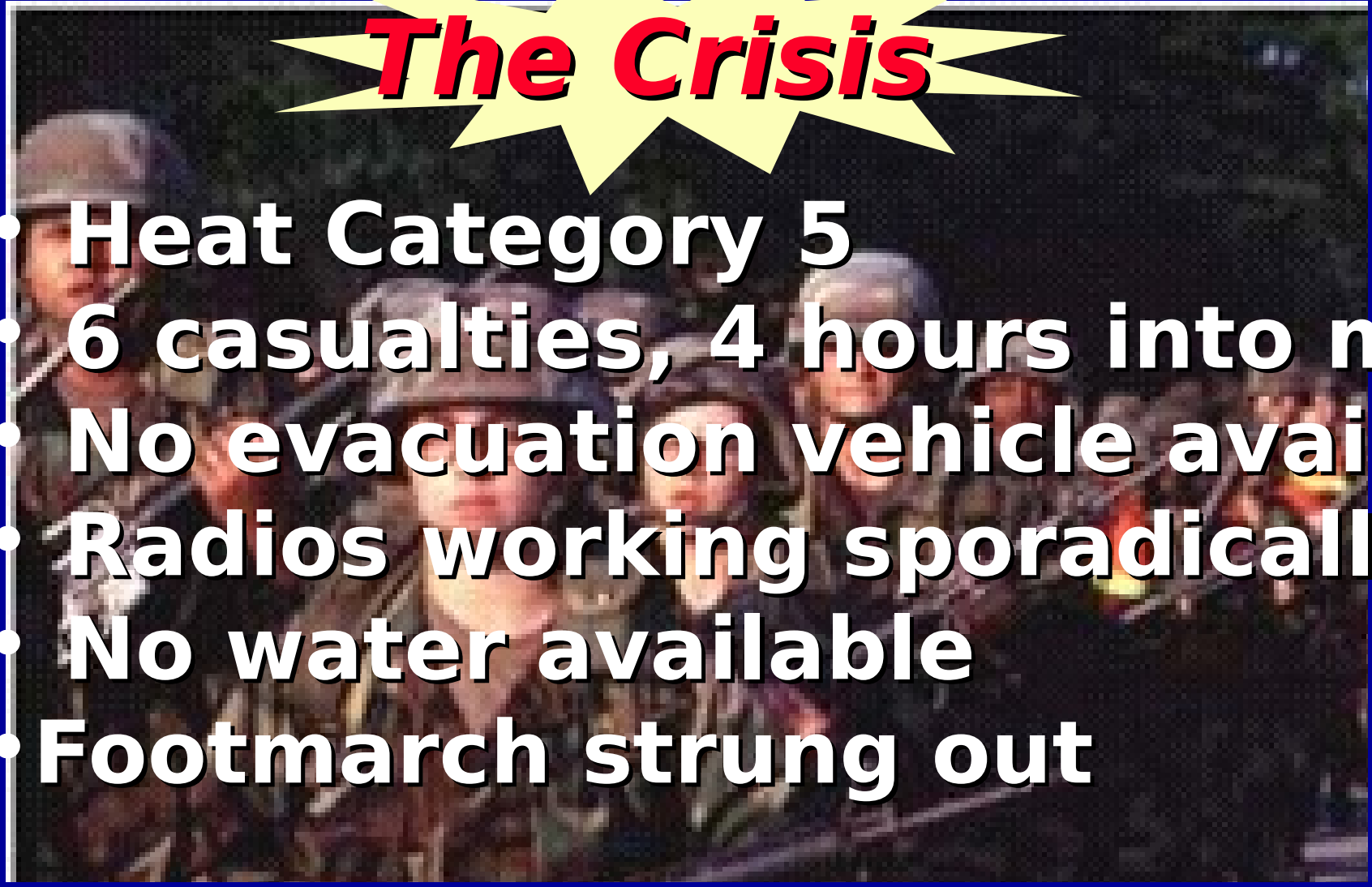
- March started at 0530 after a difficult weapons draw
- Stopped after 400 meters to adjust equ
- Delay after 3k as another unit crossed the road
- Arrived at 1st water halt at 0800 hours (2.5 hours)
- Lead element departed 1st halt 10 min later

The Road March Execution

- Company Commander issued FRAGO to route to firebreak, skip Anzio and go dir to Bastogne
- From 0830 to 0950 heat went from Cat Cat V
- Trail vehicle out of gas at 0900 hours
- First casualties at 0930

The Road March

The Crisis



- Heat Category 5
- 6 casualties, 4 hours into ma
- No evacuation vehicle availa
- Radios working sporadically
- No water available
- Footmarch strung out

The Road March
Contributing Factors

- **Platoons averaged 55 soldiers, 3 Cadre**
58 x 2qts = 29 gallons per platoon. Plan
20 gallons per platoon--9 gallons / platoo

- **Route length was 17.5 km**
17.5@4km per hour = 4.5 hours, plus 45
of rest halt time --march would take 5.25
Plan called for the march to be complete

"Simple Arithmetic"

The Road March
Contributing Factors

- **July 28 was the *27th consecutive day of***
- **1SG was asked 3 times for *MEDEVAC* at 1**
- ***Blood drive*, 24 July--60% participation**
- **Final *APFT*--27 July (day prior)**
- **Changing route to firebreak meant marc**

***loose sand* vice pavement**

- **Skipping Anzio meant *no 2d water halt a***

no breakfast

- **Only *two radios* available to the unit-bot**

***weak batteries* and worked only sporadica**

THE SURVEY RESULTS

- ✘ 45% said no cadre checked if they drank water before stepping (PCI)
- ✘81% stated no one checked canteens at halt
- ✘40% said they were not able to fill both canteens
- ✘31% said they were out of water for over an hour during the march
- ✘51% said march rate increased after

The Road March
The Result

7 soldiers evacuated

1 serious condition, hospitalized
(Discharged)
5 treated and released to quarters
(Graduated)
West Point Cadet evacuated 2 hours late
in critical condition
(Medically disqualified for commission)
Company Commander and First Sergeant
Relieved

The next case illustrates how trying to do the right thing by vigorous efforts at hydration in an Army basic trainee led to fatal water intoxication.

Hyponatremia Case #1

Hyponatremia: Water Intoxication…..Too Much Water

On 2 July 97, an 18 year-old Native American soldier from Alaska was admitted to the hospital with the acute onset of rapid weakness that led to unresponsiveness. Further investigation showed no adverse medical or family histories. He was taking no medications and did not drink alcohol or smoke.

This Soldier's Accident Could Have Been Prevented by Proper Training, GA

Background

- Soldier on split option from Alaska…high school junior.
- Highly motivated, wanted to be an Alaskan Scout
- Came to OSUT with group of Alaskans….
- In 4th week of training…Acclimated?
- Soldier ate well that AM and day prior
- 1 Jul 97, he complained of headaches and nausea.
- 2 Jul 97, he went to the rifle range with his unit…..Heat Category 5 by 1000 hrs.

Chronological Events at the Range

- By mid-morning he complained of light-headedness,
  nausea and he vomited. He was moved to the shade,
  clothes loosened, and was given water

- Cadre identified/treated soldier as a possible heat victim

- No one DS or other soldier detailed to monitor individual
  due to qualification – relied on “Buddy Check”

- Over the next 1.5 hours, he drank 4 quarts of water,
  symptoms seemed to resolve.

Chronological Events at the Range and Hospital

- Over the next 2 hours he drank an estimated **10-14 canteens of water** and vomited repeatedly.

- Evaluated by Combat Lifesaver **2 hours after initial treatment** and determined evacuation was needed

- By mid-afternoon, he was physically incapacitated and markedly obtunded.

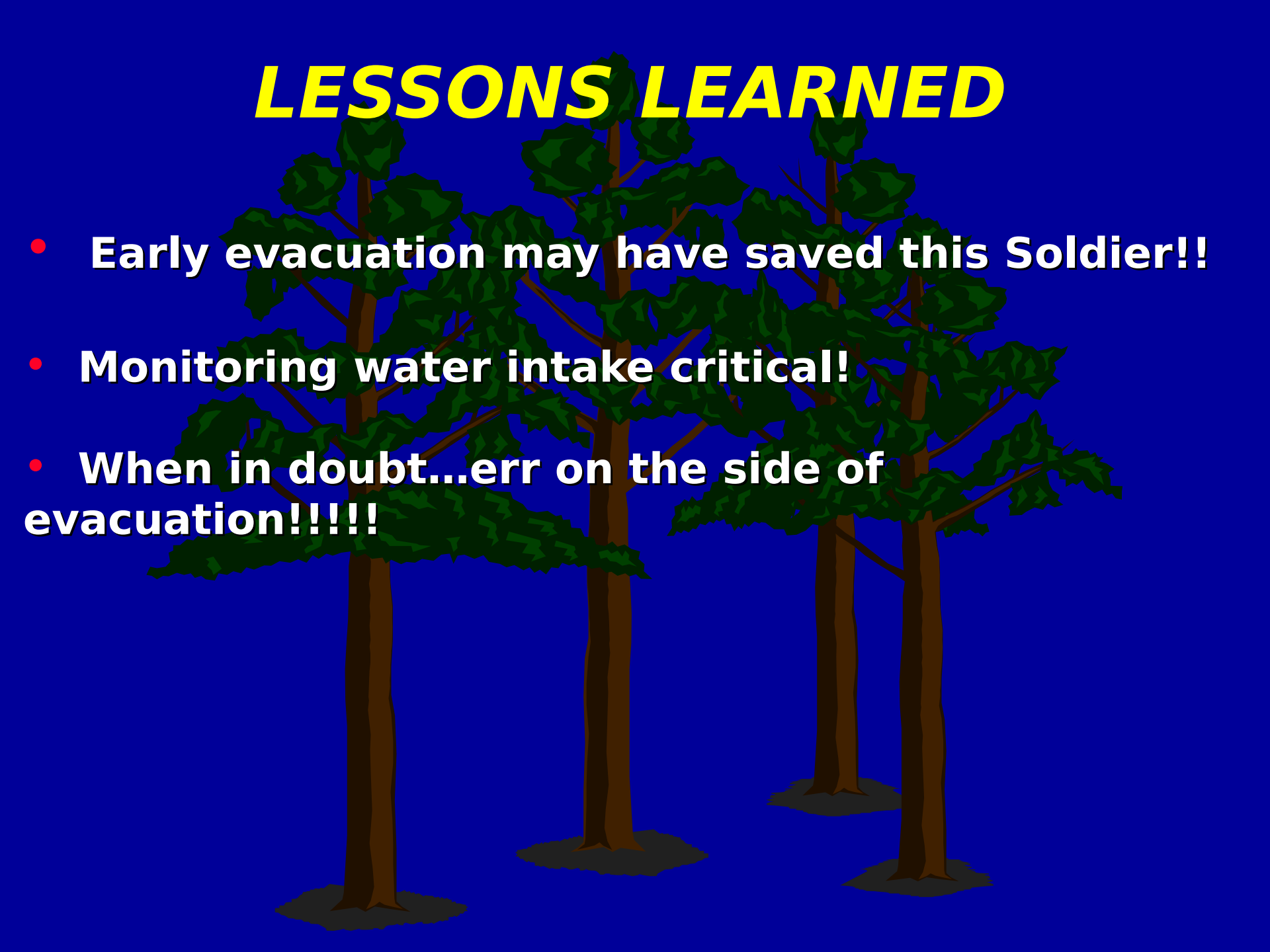
- He was transported to the hospital and arrived in the Emergency Room in respiratory arrest.

LESSONS LEARNED

- No positive control of “heat casualty”.
- Multiple Drill Sgts…no unity of care.
- Misdiagnosed…treated as heat injury.
  - Exacerbated condition…actually got worse.
- Combat Lifesaver on range as extra duty.
  - Not involved in a timely manner.
  - Over-reliance on Combat Lifesaver…no medics…no ambulance…<u>these factors place Soldiers at risk!!</u>

LESSONS LEARNED

- Early evacuation may have saved this Soldier!!
- Monitoring water intake critical!
- When in doubt…err on the side of evacuation!!!!!



PREVENTION

- No more than 1.5 quarts per hour.
- Monitor food intake, adequate sodium…3 average meals.
- “Battle Buddy” essential to monitor.
- Follow work/rest cycles based on Heat Category.
  - Most cases occur during Heat Cat 5
- Follow evacuation guidelines.

Hyponatremia First Aid

- **Pre-evacuation Treatment…**

  - Loosen clothing, place in shade
  - Limit water intake to one canteen per 30 minutes
  - May start IV (saline solution)

- **Once identified…Evacuate to medical facility!**

  - When in doubt…regardless…evacuate!

The next case is another example of hyponatremia.

Hyponatremia Case #2

AIR FORCE BASIC TRAINING UNIT, LACKLAND AFB, TEXAS.

- On 10 Sep 99, an 18 year old Airman, collapsed near the end of a 5.8 mile road march.

- On 12 Sep 99, he suffered severe brain damage, never regained consciousness and later died. A physician told officials that the Airman died of heatstroke and likely would have survived had he not suffered from water intoxication.

Information obtained from San Antonio Express News 17 NOV 9

Background

- Recruit was from OHIO.
- Recruit had been ill through most basic training.
- Had been on prescription medicine for a cold and to counter an infection.
- Visited the doctor two days prior to foot march and approved recruit to take part in exercise.
- Trainers claim they were not aware of illness.
- Fellow recruits reported that trainers knew of

Background

- Trainers were not aware of medication nor if he'd taken those drugs the day of the march.

- He had consumed 12 canteens of water (about 3 gallons) prior to the march.

- On 10 Sep 99 at 1417 hrs the march begins, the temperature was 93 degrees.

- At 1.5 miles into the march, Airman told a trainer he had consumed 12 canteens of water. On the march he consumed another 4 canteens of water.

Background

- Airman started vomiting during a Lunch break that began at 1615 hrs.

- Airman fell ill early in the march, he complained to fellow trainees and asked for help.

- Airman was not alone in needing help as the march ensued, with 3 of the 191 trainees also vomiting at various times.

Background

- The temperature hit 100 degrees at 1700 hrs.

- At about 1720 hrs lost consciousness while fording a 3-foot-deep section of the Rio Medina and was evaced to Wilford Hall Hospital.

- Brought to Wilford Hall at 1744 hrs, doctors succeeded in cooling him down, from 108 degrees to 99.3.

- On 12 Sep 99, the Airman died of severe brain damage. Autopsy report states low sodium levels in

How could this "Tragedy of Errors" have been prevented?

U.S. ARMY SAFETY PROGRAM

Commander's Safety Mission

PROTECT the FORCE
through RISK MANAGEMENT
to ENHANCE WARFIGHTING

TRADOC PRE COMMAND COURS